# High Efficiency LILT Solar Cells for Deep-Space Small Spacecraft

Completed Technology Project (2015 - 2016)

## Project Introduction

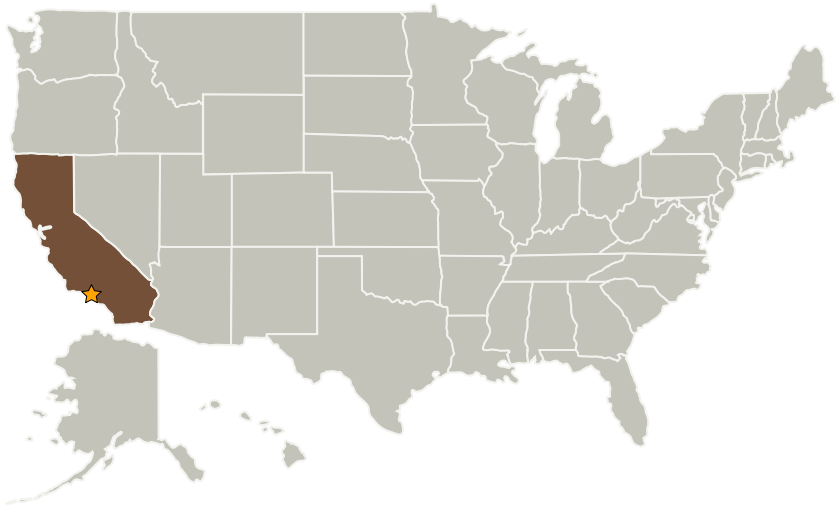
The challenge of this task is to develop low mass and high efficiency solar arrays for small spacecraft missions to deep space.

This task will develop advanced high-efficiency radiation-hard solar cells with LILT capability for deep space small spacecraft missions. It will determine LILT & radiation performance of baseline advanced solar cells; modify advanced cell designs to optimize for LILT and radiation; fabricate optimized advanced cells & demonstrate performance targets

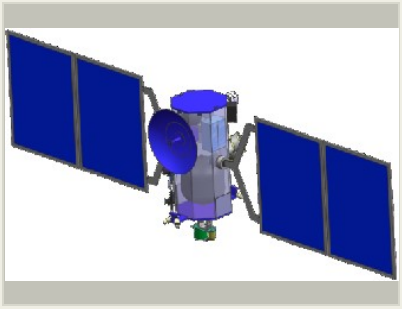
## Anticipated Benefits

This technology -Reduces power system mass, area and volume by ~20% -Reduces solar array cost by ~40% -Improves power generation in LILT/radiation environments -Extends capability of deep-space solar powered missions

## Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| ★Jet Propulsion Laboratory(JPL) | Lead Organization | NASA Center | Pasadena, California |



Project Image High Efficiency LILT Solar Cells for small spacecraft

## Table of Contents


| | |
|---|---|
| Project Introduction | 1 |
| Anticipated Benefits | 1 |
| Primary U.S. Work Locations and Key Partners | 1 |
| Images | 2 |
| Organizational Responsibility | 2 |
| Project Management | 2 |
| Technology Maturity (TRL) | 2 |
| Technology Areas | 3 |

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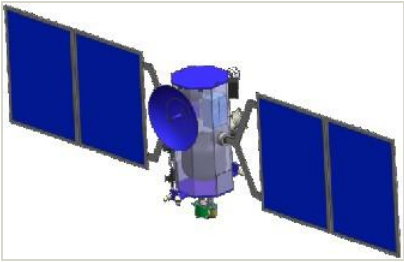
**Primary U.S. Work Locations**

California

## Images



**High Efficiency LILT Solar Cells**
Project Image High Efficiency LILT Solar Cells for small spacecraft
*(https://techport.nasa.gov/image/26083)*

## Organizational Responsibility

**Responsible Mission Directorate:**
Mission Support Directorate (MSD)

**Lead Center / Facility:**
Jet Propulsion Laboratory (JPL)

**Responsible Program:**
Center Independent Research & Development: JPL IRAD

## Project Management

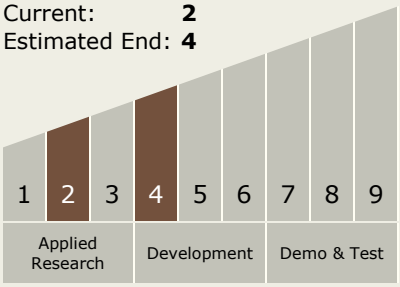
**Program Manager:**
Fred Y Hadaegh

**Project Manager:**
Fred Y Hadaegh

**Principal Investigator:**
Andreea Boca

## Technology Maturity (TRL)

Start: **2**
Current: **2**
Estimated End: **4**



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## Technology Areas

**Primary:**

- TX03 Aerospace Power and Energy Storage
  - TX03.1 Power Generation and Energy Conversion
    - TX03.1.1 Photovoltaic